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REMARKS**The Office Action**

Claims 1 -101 are pending in the application. Claims 1-8, 13-20, 25-32, 37-44 and 49-58 have previously been withdrawn as being drawn to an unelected group.

Claims 9-12, 21-24, 33-36, 45-48 and 57-60 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 11, 23, 35, 47 and 59 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 9, 21, 33 and 45 stand rejected under 35 U.S.C. § 101. Claims 9-11, 21-23, 33-35, 45-47 and 57-59 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gorenstein (US 5,969,228). The rejections are addressed below in the order in which they appear in the Office Action.

Amendments

Amendments to the claims are made to more clearly describe the subject matter that Applicants believe is patentable. Applicants respectfully submits that the claims were sufficiently described in their prior form, and enters the amendments without prejudice, in the interest of expediting allowance of the claims, and in order to address concerns stated by the Examiner with respect to 35 U.S.C. § 112.

In order to expedite issuance, Applicants have cancelled claims 9-10, 12, 21,-22, 24, 33-34, 36, 45-46, 48, 57-58 and 60, without prejudice. Applicants have also amended claims 11, 23, 35, 47, and 59. Applicants reserve the right to pursue additional subject matter in this or continuing applications.

No new matter is added by the amendments. Support for the amendments is found in throughout the specification, and in the claims as originally filed.

Claim Rejections - 35 U.S.C. § 112, Second Paragraph

At paragraph 4 of the Office Action, the Examiner has rejected claims 9-12, 21-24, 33-36, 45-48 and 57-60 under 35 U.S.C. § 112, second paragraph, as failing to particularly point out

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and distinctly claim the invention. In particular, the Examiner stated that the term "the functions" in claims 9, 21, 33, 45 and 57 and the term "the precursor" in claims 12, 24, 36, 48 and 60 lacked antecedent basis. In addition, the Examiner stated that and that the terms "Peptide Map Alignment Module" and "column offset" were unclear. The Examiner also stated that claims 9, 21, 33, 45 and 57 were incomplete for omitting essential steps, such omission amounting to a gap between the steps.

Claims 9, 12, 21, 24, 33, 36, 45, 48, 57 and 60 have been cancelled without prejudice, and so the rejections are moot.

Applicants respectfully submits that amendment of the claims has addressed the Examiner's concern and mooted the rejections.

Claim Rejections - 35 U.S.C. § 112, First Paragraph

At paragraph 11 of the Office Action, the Examiner has rejected claims 11, 23, 35, 47 and 59 for containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the Examiner stated, "it is unclear how a biomolecule can be uniquely expressed from differential intensities if the intensity is found in both maps and the intensity refers to the same biomolecule." The Examiner concluded that since the intensities refer to the same biomolecule, the claims contain subject matter that one of skill in the art would not be able to make or use.

In response, Applicants point out that claims 11, 23, 35, 47 and 59 have been amended to recite determining differential intensities between matched biomolecules, and new claims 70, 80, 90, 100 and 110 have been added to recite determining differential intensities between unmatched biomolecules. A comparison of two or more peptide maps, obtained from two or more different biological samples, can reveal biomolecules that have differential intensities (i.e., the intensity of the biomolecule in one peptide map is greater in one map compared to the intensity of the same biomolecule in another peptide map). In addition, a comparison of two or more peptides may reveal that certain biomolecules are uniquely expressed (i.e., biomolecules in a peptide map are unmatched). By comparing the aligned peptide maps after the retention time transformation function has been applied, one skilled in the art can determine differential intensities of the biomolecules to identify biomolecules expressed at different intensities between

the biological sample as well as biomolecule that are uniquely expressed in one biological sample.

Claim Rejections - 35 U.S.C. § 101

Claims 9, 21, 33 and 45 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Specifically, the Examiner stated that the claims are directed to a mathematical algorithm, which is non-statutory subject matter unless the claims include a step of physical transformation, or include a useful, tangible and concrete result. The Examiner stated that the claims contain neither a step of physical transformation nor any tangible result.

In view of the claim amendments, Applicants submit that the utility requirements have been met. Withdrawal of the rejections is respectfully requested.

Claim Rejections - 35 U.S.C. 102(b)

Claims 9-11, 21-23, 33-35, 45-47 and 57-59 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gorenstein (US 5,969,228). The Examiner stated that the Gorenstein reference teaches a method of creating peptide maps; aligning the peptide maps; determining the column offset between the pair of injections; determining the retention time transformation; and implementing their method of computers, computer programs, computer systems and displaying the information. The Examiner further stated that the Gorenstein reference teaches determining differences between the maps, which would identify differentially expressed biomolecules.

Applicants respectfully submit that the claims as presented herein are novel over the cited art. Gorenstein discloses a method of chromatography, which does not take into account the mass of the molecules in the mixture being analyzed. As such, the present invention, as recited in the claims as amended herein are not anticipated by Gorenstein.

Reconsideration and withdrawal of the rejection is respectfully requested.

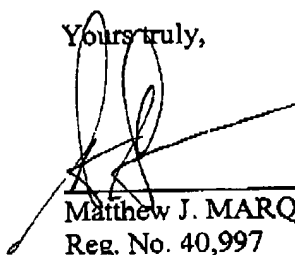
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CONCLUSION

Applicants believe that they have fully responded to the Examiner's concerns and that the claims are in condition for immediate allowance. Applicants respectfully request reconsideration and immediate allowance of the claims.

Applicants further request that any questions be directed to the undersigned.

Yours truly,


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